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LD DIDACTIC

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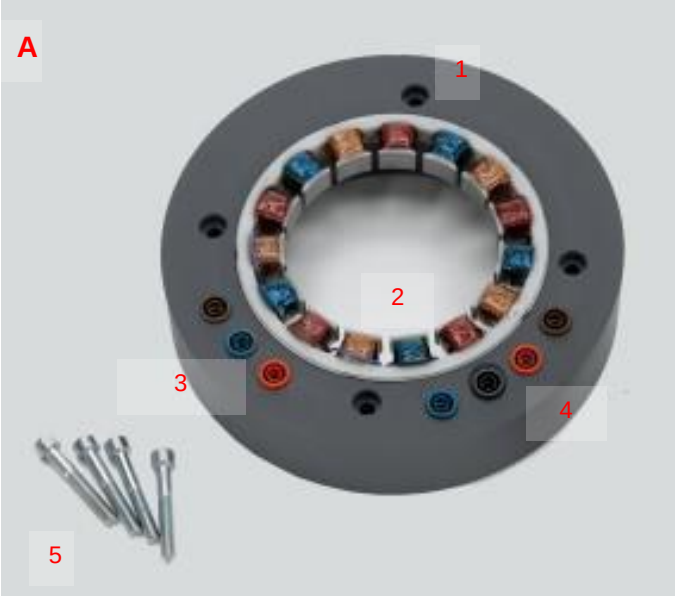
Instruction Manual 727 815

ELM Set: Multipole Stator and Rotor



A Stator

1	Hole for fastening screw	
2	Windings	
3	Sockets, left:	
	blue	W1
	red	V2
	brown	U1
4	Sockets, right:	
	red	V1
	black	U1
	brown	U2
	blue	W2
5	Fastening screws for 1	

B Rotor

6	Magnets for rotor position pick-up
7	Permanent magnets
8	Belt path

General safety notes

- Do not durably exceed the maximum current!
- The device is only usable in the context of the experimental environment in this description.

Special safety notes for handling rare earth magnets

Crushing hazard

The magnets in the rotor have a very strong attraction. They can move the rotor quickly and suddenly toward magnetic materials. Therefore they can pinch and crush skin or other body parts, such as fingers, which can cause bruises at the point of crushing.

Influence on pacemakers

The magnets within the rotor can affect the function of pacemakers and defibrillator implants. Consequently the devices can experience failures. When carrying such devices, make absolutely sure you maintain a sufficient clearance to the rotor, and inform other carriers of such devices about the possible dangers.

Risk of metal shards

The neodymium magnets within the rotor are brittle. Never try to disassemble the rotor. If two magnets hit each other, they can break and send sharp shards flying up to several meters away. This can injure the eyes of nearby people.

Influence of magnetic field

The permanent magnets within the rotor generate a very powerful magnetic field that is noticeable over great distances. Such magnetic fields can for example interfere with mobile phones, computers, storage media, credit cards or other electronic devices. Therefore keep the magnets far away from such devices or maintain a minimum safety distance of 25 cm!

Temperature resistance

The neodymium magnets within the rotor permanently lose some of their magnetism at temperatures above 80 °C. So avoid durably heating the rotor above 80 °C.

Risk of ingestion

In case the magnets get loose from the rotor, gather them using protective gloves (e.g. work gloves) and store them in a secure place you can lock. Make absolutely sure the magnets remain out of reach of children. Ingestion can lead to severe internal injuries!

Warning

The magnets are not toys!

1 Scope of Supply

- Multipole rotor
- Multipole stator
- 4 fastening screws

2 Technical Data

• Maximum operating voltage	12 V
• Maximum current	1 A
• Maximum speed	3,000 rpm

3 Operation

3.1 Assembly

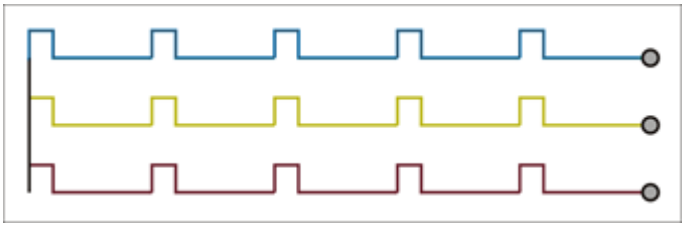
Use the four enclosed screws to fasten the stator onto the **basic machine unit**, *727 811*, as shown. Tighten the screws!

3.2 Operation as synchronous machine

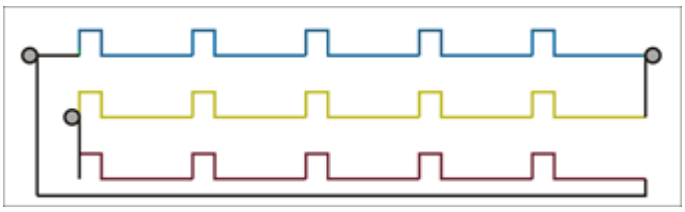
Place the enclosed rotor or the **rotor**, *727 816*, onto the well oiled shaft. Pay attention to the safety instructions! The rotor moves suddenly on the axis. Hold it with your entire hand on the forward part. Keep it from slamming against the base plate!

Choose the rotor's configuration:

Star



Delta



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Place the **safety bridging plugs with tap**, *500 592*, according to one of the following illustrations:

Star connection:

Delta connection:

Connect the voltage supply **three phase generator**, *725 721*, to the three phases. Set a frequency of 0.5 Hz and a voltage of 2 V. Switch the voltage on by turning the rotary encoder. When increasing the frequency and voltage, always make sure the current does not exceed its maximum value (see Technical Data)!